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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/665,796 | 09/19/2003 | William H. Chandler JR. | SMX 3137.3 (2000-021DIV1) | 6744 |

321 7590 06/30/2005

SENNIGER POWERS LEAVITT AND ROEDEL
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| EXAMINER | |
|---|---|
| WACHTEL, ALEXIS A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1764 | |

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/665,796 | CHANDLER | |
| | Examiner | Art Unit | |
| | Alexis Wachtel | 1764 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *9-19-03*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *109-144* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *109-137 and 142-144* is/are rejected.

7)☒ Claim(s) *138-141* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12-22-03;5-14-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## *Detailed Action*

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 109,112-120,122,123,127-132 and 136 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,455,316 to Turner et al.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to Claim 109, Turner et al teach a method of parallel processing multiple reaction mixtures comprising the steps of: providing reaction chambers with starting materials to form reaction mixtures (Col 2, lines 34-36); agitating the reaction mixtures during at least a portion of the experiment (Col 3, lines 34-36); providing interchangeable manifolds (1006) having inlet/outlet ports in fluid communication with the respective reaction chambers, wherein a fluid can be introduced into, withdrawn from or vented through the respective reaction chambers; and evaluating one or more properties of the reaction mixtures or a portion of the reaction mixture by measuring at least one characteristic of the reaction mixtures during at least a portion of the reaction (Col 2, lines 51-55).

With respect to Claim 112, Turner et al teach the step of applying a positive pressure to the respective reaction chambers (Col 3, lines 50-52), wherein the maximum pressure is 1500 psi.

With respect to Claim 113, Turner et al teach The method of claim 109 further including the step of introducing a fluid into the respective reaction chambers under pressure (Col 3, lines 30-38).

With respect to Claim 114, Turner et al teach The method of claim 113 further including the step of venting outlet ports associated with the respective reaction chambers to a head space defined by the reaction chambers (Col 30, lines 12-26).

With respect to Claim 115, Turner et al teach the step of providing an inlet port in fluid communication with the respective reaction chambers so as to establish a common flow path to the respective reaction chambers (Col 34, lines 54-67; Col 35, lines 1-6).

With respect to Claim 116, Turner et al teach further including the step of providing an outlet port in fluid communication with the respective reaction chambers so as to vent the respective reaction chambers to a head space defined by the respective reaction chambers (Col 30, lines 12-26) or plugging said outlet port to prevent fluid flow there through.

With respect to Claim 117, Turner et al teach the step of coupling the respective reaction chambers to a common pressure source (916) to establish a common pressure across the respective reaction chambers.

With respect to Claim 118, Turner et al teach including the step of providing an outlet port (920,934) in fluid communication with the respective reaction chambers so as to vent the respective reaction chambers to a head space defined by the respective reaction chambers or plugging said outlet port to prevent fluid flow therethrough.

With respect to Claim 119, Turner et al teach wherein the reaction chambers are provided with starting materials using a robotic materials handling system (146).

With respect to Claim 120, Turner et al teach the step of placing the reaction chambers in a sealed enclosure (1540,1542).

With respect to Claim 122, Turner et al teach wherein the reaction mixtures are evaluated by monitoring a temperature of each of the reaction mixtures (Col 3, lines 22-27).

With respect to Claim 123, Turner et al teach wherein the reaction mixtures are evaluated by monitoring heat transfer rates into or out of the respective reaction chambers (Col 3, lines 22-27).

With respect to Claim 127, Turner et al teach wherein the agitating step can include the steps of: bringing a stirring blade assembly into contact with the reaction mixtures, the stirring blade assembly including a spindle (1404) supporting a rotatable stirring blade (1316); and rotating each of the stirring blades so as to cause agitation or mixing of the reaction mixtures.

With respect to Claim 128, Turner et al teach wherein the stirring blades rotate at the same rate, the stirring blades being driven by a motor driven gear drive system (Col 5, lines 13-15). Examiner notes that the identification of stirring speed as a reaction parameter enables for identical stirring rates in all reaction vessels.

With respect to Claim 129, Turner et al teach wherein the reaction mixtures are evaluated by monitoring the torque needed to rotate the stirring blade assembly (Col 3, lines 23-27).

With respect to Claim 130, Turner et al teach wherein the torque is monitored by measuring the phase lag between the motor torque and the torque of the stirring blade assembly (Col 2, lines 43-45).

With respect to Claim 131, Turner et al teach wherein the reaction mixtures are evaluated by determining the viscosity of each of the reaction mixtures from a calibration relating torque and viscosity (Col 23, lines 62-67; Col 24, lines 1-3).

With respect to Claim 132, Turner et al teach wherein the reaction mixtures are evaluated by the steps of: measuring the heat transfer rates into or out of the respective reaction chambers (Col 3, lines 22-23); computing conversion of the starting materials based on heat transfer rates into or out of the respective reaction chambers (Col 17,

lines 27-67; Col 18, lines 1-5); and calculating molecular weight of a component of the reaction mixtures based on conversion of the starting materials and on viscosity of each of the reaction mixtures (Col 23, lines 5-13).

With respect to Claim 136, Turner et al teach wherein the property evaluated during the evaluation step includes molecular weight, specific gravity, elasticity, dielectric constant, conductivity or calorimetric data (Col 3, lines 22-28).

With respect to Claim 142, Turner et al teach providing the reaction chamber with starting materials includes the step of providing starting materials in the form of a liquid, solid or a slurry (Col 32, lines 29-34).

With respect to Claim 143, Turner et al teach providing the reaction chambers with starting materials can further include the step of adding a heterogeneous, homogeneous or asymmetric catalyst to the starting materials (Col 32, lines .

With respect to Claim 144, Turner et al teach the step of providing can include the step of providing the reaction chambers with starting materials includes the step of providing starting materials for conducting polymerization or hydrogenation reactions (Col 32, lines 40-46).

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US 5,866,342 to Antonenko et al.

With respect to Claim 109, Antonenko et al teach a method of parallel processing multiple reaction mixtures comprising the steps of: providing reaction chambers with starting materials to form reaction mixtures (30); agitating the reaction mixtures during at least a portion of the experiment (Col 6, lines 44-50); providing interchangeable

manifolds (40,44) having inlet/outlet ports in fluid communication with the respective reaction chambers, wherein a fluid can be introduced into, withdrawn from or vented through the respective reaction chambers; and evaluating one or more properties of the reaction mixtures or a portion of the reaction mixture by measuring at least one characteristic of the reaction mixtures during at least a portion of the reaction (Col 5, lines 60-65).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 110,121, 124-126, 133-135,137 rejected under 35 U.S.C. 103(a) as being unpatentable over US 6455316 to Turner et al.

With respect to Claim 110, Turner et al teach that a reaction sample can be removed from a reaction vessel by the robotic fluid transfer system (146) and placing the reaction sample into a separate container (Col 29, lines 7-10). Turner et al do not explicitly teach that the step of sampling a portion of the reaction mixture from the respective reaction chambers via at least one of the interchangeable manifolds, wherein sampling occurs at a pressure greater than ambient conditions and without reducing the pressure in the respective reaction chambers. However, since the robotic fluid transfer system (146) introduces reactant into the reaction vessel through ports in an interchangeable manifold, it would have been obvious to have employed a sample

removal process that ensures the sterile environment of the reaction vessel. One of ordinary skill would have been motivated by the desire to ensure that the reaction vessel can continue prcessing reactants.

With respect to Claim 121, Turner et al teach the step of blanketing the respective reaction chambers in an inert gas atmosphere while providing the respective reaction chambers with the starting materials (Col 7, lines 59-60).

With respect to Claim 124, Turner et al teach wherein monitoring the heat transfer rates comprises the steps of: measuring temperature differences between each of the reaction mixtures and a thermal reservoir surrounding the reaction chambers; and determining heat transfer rates from a calibration relating the temperature differences to heat transfer rates (Col 17, lines 17-50).

With respect to Claim 125, Turner et al teach computing conversion of the starting materials based on the heat transfer rates of the monitoring step (Col 17, lines 51-52).

With respect to Claim 126, Turner et al teach determining rates of reaction based on conversion of the starting materials (Col 18, lines 26-36).

With respect to Claim 133, Turner et al teach wherein the evaluating step further comprises the step of monitoring the power needed to rotate each of the stirring blade assemblies in the rotating step (Col 24, lines 54-56).

With respect to Claim 134, Turner et al teach wherein the reaction mixtures are evaluated by determining the viscosity of each of the reaction mixtures from a

calibration relating power and viscosity (Col 24, lines 54-56). Examiner notes that measurement of torque is related to viscosity.

With respect to Claim 135, Turner et al teach wherein the reaction mixtures are evaluated by the steps of: measuring the heat transfer rates into or out of the respective reaction chambers (Col 3, lines 22-23); computing conversion of the starting materials based on heat transfer rates into or out of the respective reaction chambers (Col 17, lines 27-67; Col 18, lines 1-5); and calculating molecular weight of a component of the reaction mixtures based on conversion of the starting materials and on viscosity of each of the reaction mixtures (Col 23, lines 5-13).

With respect to Claim 137, Turner et al teach that a reaction sample can be removed from a reaction vessel by the robotic fluid transfer system (146) and placing the reaction sample into a separate container (Col 29, lines 7-10).

Turner et al do not explicitly teach the step of removing a portion of the reaction mixture from the respective reaction chambers includes the step of establishing a fluid flow path in fluid communication with the respective reaction chambers and ambient conditions, wherein a portion of the reaction mixture can be forced out of the respective reaction chambers and into a sample loop when the fluid flow path is exposed to ambient conditions. However, since the robotic fluid transfer system (146) introduces reactant into the reaction vessel through ports in an interchangeable manifold, it would have been obvious to have employed a sample removal process that ensures the sterile environment of the reaction vessel. One of ordinary skill would have been motivated by the desire to ensure that the reaction vessel can continue reacting reactants.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,455,316 to Turner et al in view of US 6045755 to Lebl et al.

With respect to Claim 111, Turner et al do not teach the step of filtering fluid introduced into or withdrawn from the respective reaction chambers. Lebl is directed to combinatorial chemical reactors and teaches that aspiration needles can include filtering or sieving means to prevent aspiration of solid phase supports (Col 29, lines 15-27). In view of this teaching it would have been obvious to one of ordinary skill to have integrated a filter into the probe as disclosed by Turner et al as a preventive measure for ensuring that undesirable reaction components are not withdrawn from the reaction vessel.

***Allowable Subject Matter***

8. Claims 138-141 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to Claim 138, the closest art to Turner et al teach the concept of removing reaction mixture out of a reaction chamber, the reference do not teach the step of removing a portion of the reaction mixture from the respective reaction chambers further includes the step of: providing first flow control valves having an inlet port supporting a first tubular member, the first tubular member having one end in fluid communication with the respective reaction chambers and a second end supported by the first flow control valve such that the second end can be exposed to ambient conditions, whereby the back pressure in the respective reaction chambers pushes a

portion of the reaction mixture into the first tubular member when the second end of the tubular member is exposed to ambient conditions. Claims 139-141 depend off claim 138.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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